FACT SHEET
(pursuant to NAC 445A.401)

Permittee Name: **Hycroft Resources and Development, Inc.**
Brimstone Project

Permit Number: **NEV94114**

A. Description of Discharge

Location: This project is located approximately 50 air miles west of Winnemucca, Nevada near the abandoned townsite of Sulphur in Township 35N, Range 29E, Sections 24, 25, 26 and Township 35N, Range 30E, Sections 19, 30 and 31 between the Brimstone Pit and the Lewis Project.

Characteristics: The Brimstone Project consists of open pit mining with ore processing by conventional cyanide heap leaching technology and precious metal recovery via zinc precipitation. The facility is required to be designed, constructed, operated and closed without any discharge or release in excess of those standards established in regulation except for meteorological events which exceed the design storm event.

B. Synopsis

The Brimstone project primarily consists of an open pit mine, caustic and sodium cyanide tanks, a leach pad consisting of two phases, high and low pregnant ponds, barren pond and diatomaceous earth (DE) settling pond, a process plant, waste rock dumps, and an emergency overflow pond which was previously a pregnant pond for the Lewis Project.

The 9.1 million square foot leach pad, divided into two phases and a total of 10 cells, will ultimately accommodate approximately 50 million tons of run-of-mine ore. The ore is end dumped onto the pad in lift thicknesses of approximately 25 to 50 feet to a maximum height of 200 feet. The liner system consists of a low permeability clay liner

($\leq$ 1 x 10^{-7} cm/sec) with numerous internal ditches that are synthetically-lined (on 200 ft. centers) below the hydraulic relief pipes (which are on 100 ft. centers). The clay from the pits will be amended with 5% bentonite to achieve the required permeability. The entire main solution collection ditches of Phase 1 and 2 are traced with a one-inch diameter perforated leak detection pipe which daylights at the pregnant pond (Phase 1) and in the solution channel (Phase 2). These perforated pipes are located beneath the synthetic liner in gravel but on top of the one-foot clay layer surrounded by sand. The synthetically-lined solution ditch, which carries (via pipelines) low pregnant solution to the low pregnant pond, is leak detected with a perforated pipe which daylights in the low pregnant pond.

The high pregnant, low pregnant and barren ponds, which are hydraulically connected, each have a volume of 2.65 million gallons. At least two feet of freeboard will be maintained in the operating ponds (including the DE pond) and an additional volume will be maintained in the pregnant and barren ponds above the maximum operating depth but below the freeboard for containment of the 25-year, 24-hour storm event. Each pond, including the DE pond, has a 60-mil HDPE primary liner and a 60-mil HDPE secondary liner with a geonet located between the liners. The pond bottoms are sloped, allowing process fluid which may escape the primary liners to gravity flow to a clean gravel-filled sump (2 feet deep in the pregnant and barren ponds) which are evacuated via a 4-inch diameter PVC pipe. The 4-inch pipe from the gravel-filled sump of the DE pond reports to the barren pond. A four million gallon emergency overflow pond, which was a pregnant pond for the Lewis Project, will provide additional containment of process fluids. The synthetically-lined overflow pond is hydraulically connected to the low pregnant pond via a transfer channel and the low pregnant pond is hydraulically connected to the barren pond via two 16 inch diameter pipes.

Double-walled pipes is used in those areas around the plant where it is not feasible to install synthetically-lined ditches. In either case, all pipes will have the required secondary containment.

Two diversion V-ditches will direct runoff resulting from the 100-year, 24-hour storm event away from the process components. One is located on the north side of Phase 1

(temporary) and the other will be located on the east side of Phase 2.

The recovery plant is designed to prevent leaks or spills from entering the environment. If process solution escapes primary containment within the building, it will gravity flow via an 18 inch diameter HDPE pipe into either the DE pond or the barren pond. The required 110% secondary containment is provided.

Caustic and sodium cyanide tanks are provided with the required minimum secondary containment.

Quarterly samples representative of the wasterock will continue to be taken in accordance with the permit conditions to assure that acid mine drainage will not occur.

C. Site Hydrology and Background Groundwater Quality

Eight boreholes were completed to define the lithology and depth to groundwater. Groundwater was not encountered in exploration borings that reached depths exceeding 800 feet. After extensive drilling, a flow of 3 gpm was found at a depth of 345 feet. This groundwater was defined by Hycroft as "laterally isolated and a perched source".

Make-up water will be supplied from the existing Crofoot Mine wells which are located approximately two miles southwest of Sulfur along the railroad right-of-way. Hycroft has indicated that the quality of the water from these wells does not meet the drinking water standards. Four wells were sampled in the area to determine water quality. Well 1 adjacent to the pad meets drinking water quality except for iron, lead, manganese, TDS. Well 2, approximately one mile to the north exceeded the same constituent concentrations but in addition, arsenic was also exceeded. Aluminum, Beryllium, Nickel and Thallium concentrations were not determined.

D. Procedures for Public Comment

The Notice of the Division's intent to renew a permit authorizing the facility to construct, continue to operate and close subject to the conditions contained within the permit, is being sent to the Humboldt Sun in Winnemucca for publication. The notice is being mailed to interested

persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing within a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, the regional administrator, or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed facility or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

E. Proposed Determination

The Division has made the tentative determination to issue the proposed permit.

F. Proposed Effluent Limitations, Schedule of Compliance and Special Conditions

See Section I of the permit.

G. Rationale for Permit Requirements

The facility is located in an area where annual evaporation is greater than annual precipitation. Therefore, it must operate under a standard of performance which authorizes no discharge(s) except for excess accumulations which are a result of a storm event beyond that required by design for containment.

The primary emphasis for identification of escaping process solution will be placed on routine inspection of the leak

detection systems and routine inspection of the facilities as required by the permit and operating plans.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S.C. 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50CFR10, April 15, 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with state permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Blvd., Suite 234, Reno, Nevada 89502-7147, for additional information.

Prepared by: Bob Carlson
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